

### **REMARKS**

This is in response to the Office Action that was mailed on April 30, 2003. Claim 1 is amended to incorporate the recitation of original claims 2 and 8. The dependency of claim 9 is corrected, in view of the cancellation of claim 8. Claim 2 is amended based upon disclosure in lines 6-17 on page 8 of the specification. New claims 12 and 13 are based upon disclosure in lines 6-17 on page 8 of the specification and in lines 2-7 on page 16 of the specification. The specification is amended to correct a typographical error. No new matter is introduced by this Amendment. Claims 1-7 and 9-13 as amended are in the case.

### **FORMAL REJECTIONS**

Claim 4 was rejected as being an improper dependent claim, due to the fact that it is a multiple dependent claim which depends from a claim that is itself a multiple dependent claim. This ground of rejection has been obviated by amending claim 3, which was the multiple dependent claim from which claim 4 depends.

### **PRIOR ART REJECTIONS**

Inasmuch as claim 1 is amended to incorporate the recitation of original claim 2, the only prior art rejection of record that is relevant is the rejection of claims 1-4 and 11 as being unpatentable over US 5,364,899 (Watanabe) in view of

US 4,208,317 (Cerny), US 6,130,282 (Imahashi), US 6,329,451 (Matsumoto), or US 5,559,180 (Takahashi). The rejection is respectfully traversed.

A composition comprising the recited relative amounts of all of specified components (A) through (D) would be unobvious for a person of ordinary skill in the art, no matter what combination of these references is consulted.

The Examiner acknowledges that Watanabe fails to teach or suggest compositions containing a coated red phosphorus. The Examiner cites Cerny, Imahashi, and Matsumoto, however, as allegedly demonstrating that the use of coated red phosphorus is well known. The Examiner argues that the presently claimed invention is therefore *prima facie* obvious.

Applicants do not necessarily agree that those of ordinary skill in the art would be motivated by the Cerny, Imahashi, and/or Matsumoto disclosures to modify the compositions of Watanabe in such a way that they would coincide with the compositions presently claimed. But in any case, Applicants have supplied evidence rebutting the Examiner's apparent presumption that the present invention is based simply on the use of coated red phosphorus, without more. As Applicants demonstrate in Table 2 on pages 23-24 of the specification, it is the overall combination of ingredients in the relative amounts recited in the present claims that unexpectedly provides compositions having a full spectrum of excellent properties.

For instance, the compositions of Comparative Examples 9, 10, 13, and 14 have less polyacetal resin than is required by the present claims, and the composition of Comparative Example 15 has less fatty acid metal salt than is required by the present claims. As shown in Table 2, Comparative Examples 9, 10, and 15 provide compositions with thermal stabilities vastly inferior to those of the compositions of the present invention, and Comparative Examples 13 and 14 provide compositions with Izod impact strengths significantly inferior to those of the compositions of the present invention.

It is only by balancing all of the components of the composition in the manner required by the present claims that one obtains compositions that are excellent in flexural modulus, impact strength, thermal stability, **and** flame retardancy. Clearly, the claims in their present form define an invention of selection that is neither taught nor suggested by the prior art.

WATANABE ALONE. Regarding any rejection of claims 1 and 4 over Watanabe alone, it is noted that Watanabe relates to **making a polycarbonate resin flame-resistant**, while the present invention relates to making a polyacetal resin flame-resistant. Watanabe teaches that “in addition to the polycarbonate resin, **other resins may be incorporated to such an extent not to impair the flame-retardancy**, as the case requires. Typical examples of such an additional resin include ... a polyacetal”.. Column 4, lines 48-65. A person of ordinary skill in the art, appreciating that a polyacetal resin inhibits flame-retardancy of a

composition when it is added to the composition, would not be motivated to incorporate a polyacetal resin possessing such a property into a flame-retardant **polycarbonate** resin composition in the **large relative amounts** defined in claim 1 herein.

Further, Watanabe illustrates zinc stearate as a zinc salt and red phosphorus as a flame-retarding additive. Column 2, line 58 and column 7, line 1, respectively. However, Watanabe discloses neither a specific kind of red phosphorus nor a metal salt except for a zinc salt, while claim 1 as currently amended defines red phosphorus and a metal salt limited as explained above.

As mentioned above, Watanabe explicitly does not disclose the (B) and (D) components, and further it would be manifest to a person skilled in the art that a ratio of polycarbonate resin and an additional polyacetal resin does not fall within the range of the ratio of the (A) and (C) components as defined in present claim 1. Accordingly, it is evident that claims 1 and 4 in their present form recite subject matter that is unobvious over the Watanabe reference.

WATANABE AND KOBAYASHI. Regarding any rejection of claims 1, 4, and 8-10 over Watanabe and Kobayashi, it is seen that Kobayashi relates to improving melt flow characteristics and mechanical characteristics of a material by incorporating a specific polyvinyl cyclohexane compound into the material. If necessary, the material may contain metal soap as an additive. Column 5, lines

10-16. Examples of the metal soaps include lithium stearate and zinc stearate. Column 7, line 65 - column 8, line 3.

However, motivation for combining Watanabe with Kobayashi as proposed by the Examiner clearly fails. Kobayashi neither discloses nor suggests that lithium stearate brings about elevation of the flame-retardancy of a material by adding it to the material. Accordingly, a person of ordinary skill in the art would not be motivated to utilize the lithium stearate of Kobayashi in the compositions of Watanabe.

Further, as explained above, neither the zinc compounds of Watanabe nor those of Kobayashi fall within the scope of the metal salt of the (D) component as it is defined in claim 1 as amended herein. And, there is no description as to a polyacetal resin in Kobayashi. Accordingly, even making the unmotivated combination of Kobayashi and Watanabe does not provide the compositions claimed herein.

WATANABE AND KATOH. Katoh relates to a phenolic resin composition. Although Kato may disclose the instant phenolic resins, Katoh is quite silent about a polyacetal resin. Accordingly, even if Katoh and Watanabe are combined, the combination will not provide a composition of claim 1 as it is amended herein because the composition of the Watanabe-Katoh combination does not have the essential components and the ratios thereof as defined in claim 1, except perhaps for the phenolic resin of component (C).

WATANABE, CERNY, IMAHASHI, MATSUMOTO, TAKAHASHI. Cerny, Imahashi, and Matsumoto disclose the same type of red phosphorus as is recited in component (B) of claim 1. However, even if a person of ordinary skill in the art combines Watanabe with Cerny or the like, such combination will not reach the compositions of currently amended claim 1. This is because the composition of such a combination does not have all of the essential components and the ratios thereof as required by claim 1 in its present form.

The Examiner should appreciate that it is only by balancing all of the components so of the composition in the manner required by the present claims that one obtains compositions which are unexpectedly excellent in flexural modulus, impact strength, thermal stability, and flame retardancy. Any combination of Watanabe with these other references is simply based on impermissible hindsight.

Further, although Takahashi discloses silicon oil as a lubricant, it does not suggest that such a lubricant can be effectively added to the flame-retardant composition as defined in claim 1 herein. Accordingly, a person of ordinary skill in the art would not be motivated to add Takahashi's silicon oil to the composition of Watanabe. In any event, the resulting composition does not have all of the essential components and relative amounts required by independent claim 1 or by dependent claim 11.

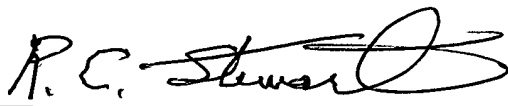
Serial No. 09/862,726  
Docket No. 0152-0561P


For any questions concerning this application, the Examiner is requested to contact Richard Gallagher (Reg. No. 28,781) at (703) 205-8008.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By   
Raymond C. Stewart, #21,066

RCS/RG   
0152-0561P

P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000